

### Claims

1. Safety apparatus to be added to a winged intravenous infusion assembly, said infusion assembly having a needle attached to one end of a body and a hub at the other end of said body, a pair of wings extending from said body between said one and other ends, said apparatus comprising:

a base adapted to be matingly fitted onto said body, said base having at least one pair of arms that firmly embraces a portion of said body or said hub when said base is fitted to said body; and

a housing hingedly attached to said base, said housing being pivotable to a position in substantial alignment along the longitudinal axis of said base for enveloping said needle.

2. Safety apparatus of claim 1, further comprising:

locking means integral to said housing for fixedly retaining said needle relative to said housing once said housing is pivoted substantially to said alignment position.

3. Safety apparatus of claim 2, wherein said locking means comprises a hook that snaps over and retains said needle within said housing when said housing is pivoted substantially to said alignment position.

4. Safety apparatus of claim 2, wherein said locking means comprises at least one pair of fingers coacting to prevent said needle from being removed from said housing once said housing envelops said needle.

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4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said needle is  
6 enveloped by said housing.

6. Safety apparatus of claim 1, wherein said base includes a pair of first locking means and said housing includes a corresponding pair of second locking means, said first and second pairs of locking means cooperating to maintain said housing relative to said base when said housing is pivoted to said alignment position.

1 7. Safety apparatus of claim 1, wherein said base is configured to have  
2 an interior circumference surface that comes into intimate contact with a  
3 substantial portion of the outer circumference surface of said body of said  
4 infusion assembly when said base is fitted onto said body..

1 8. Safety apparatus of claim 7, wherein said interior circumference  
2 surface of said base is coated with an adhesive means for bonding said  
3 base to said body of said infusion assembly once said base is matingly  
4 fitted to said body.

1 9. Safety apparatus of claim 1, wherein said base comprises two pairs  
2 of arms, one of said pairs of arms embracing said hub of said body while

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3 the other of said pairs of arms embracing the portion of said body  
4 separating said wings from said needle.

1 10. Safety apparatus of claim 1, wherein said base comprises a tubular  
2 portion that slidably inserts over an end portion of said body separating  
3 said wings from said needle to thereby matingly fit said base to said body.

1 11. Safety apparatus of claim 10, wherein said base comprises a pair of  
2 arms extending from the end of said base remote from said tubular portion,  
3 said pair of arms snappingly fitted over said hub to securely embrace said  
4 hub after said tubular portion is fully mated to said end portion of said body  
5 of said infusion assembly.

1 12. Safety apparatus of claim 1, wherein said housing comprises a  
2 groove extending substantially along the length of said housing, said  
3 groove being dimensioned to have a cross section that is slightly smaller  
4 than the cross section of said needle so that when said housing is pivoted  
5 to said alignment position, said needle is pressed into said groove and is  
6 fittingly enveloped thereby.

1 13. A method of preventing a contaminated needle of a winged  
2 intravenous infusion assembly from being exposed to the environment,  
3 said infusion assembly having a body from which said needle extends, a  
4 pair of wings extending from said body perpendicularly to said needle, said  
5 method comprising the steps of:

6 mating a safety device to said body of said assembly, said safety  
7 device including a base having at least one pair of arms that firmly  
8 embraces a portion of said body, said safety device further having a  
9 housing hingedly extending from said base; and

10 pivoting said housing to a position in substantial alignment along the  
11 longitudinal axis of said base to envelop said needle.

1 14. Method of claim 13, further comprising the step of:

2 providing locking means integral to said housing for fixedly retaining  
3 said needle relative to said housing once said housing is pivoted  
4 substantially to said alignment position.

1 15. Method of claim 14, wherein said locking means comprises a hook  
2 that retains said needle within said housing when said housing is pivoted  
3 substantially to said alignment position.

1 16. Method of claim 14, wherein said locking means comprises at least  
2 one pair of fingers coacting to prevent said needle from being removed  
3 from said housing once said housing is pivoted to envelop said needle.

1 17. Method of claim 13, further comprising the step of:

2 forming a groove substantially along the length of said housing, said  
3 groove being dimensioned to have a cross section slightly smaller than the  
4 cross section of said needle so that when said housing is pivoted to said  
5 alignment position, said needle is pressed into said groove and is fittingly  
6 enveloped thereby.

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1 18. Method of claim 13, further comprising the step of:  
2 providing at least one locking means at said base and at least an  
3 other locking means at said housing;  
4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said housing is  
6 pivoted to envelop said needle.

1 19. Method of claim 13, further comprising the step of:  
2 providing a pair of first locking means at said base and a  
3 corresponding pair of second locking means at said housing, said first and  
4 second pairs of locking means cooperating to maintain said housing  
5 relative to said base when said housing is pivoted to envelop said needle.

1 20. Method of claim 13, further comprising the step of:  
2 configuring said base to have an interior circumference surface that  
3 comes into intimate contact with a substantial portion of the outer  
4 circumference surface of said body of said infusion assembly when said  
5 base is fitted onto said body.

1 21. Method of claim 20, further comprising the step of:  
2 coating said interior circumference surface of said base with an  
3 adhesive means so that said base is bonded to said body of said infusion  
4 assembly once said base matingly fits over said body.

1 22. Method of claim 13, further comprising the step of:  
2 providing said base with two pairs of arms, one of said pair of arms  
3 being provided for embracing said hub of said body while the other of said  
4 pair of arms being provided for embracing the portion of said body  
5 separating said wings from said needle.

1 23. Method of claim 13, further comprising the step of:  
2 providing at said base a tubular portion that slidably fits over an end  
3 portion of said body to thereby matingly fit said base to said body.

1 24. Safety apparatus, comprising:  
2 a base adapted to fit onto the body of an intravenous device having  
3 one end from which a needle extends and an other end to which a tubing  
4 is connected; and  
5 a housing hingedly attached to said base, said housing being  
6 pivotable to a position in substantial alignment along the longitudinal axis  
7 of said base so as to envelop said needle.

1 25. Safety apparatus of claim 24, wherein said base is configured to  
2 have an interior circumference surface that comes into intimate contact  
3 with a substantial portion of the outer circumference surface of said body.

1 26. Safety apparatus of claim 25, wherein said interior circumference  
2 surface of said base is coated with an adhesive means so that said base  
3 is bonded to said body of said intravenous device once said base comes  
4 into intimate contact with the outer circumference surface of said body.

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27. Safety apparatus of claim 24, further comprising:  
locking means integrated to said housing for fixedly retaining said  
needle within said housing once said needle is enveloped by said housing.

28. Safety apparatus of claim 27, wherein said locking means comprises a hook that snaps over and retains said needle within said housing when said housing is pivoted substantially to said alignment position.

1 29. Safety apparatus of claim 27, wherein said locking means comprises  
2 at least one pair of fingers coacting to prevent said needle from being  
3 removed from said housing once said housing is pivoted to envelop said  
4 needle.

1 30. Safety apparatus of claim 27, wherein said base includes at least  
2 one locking means and said housing includes at least an other locking  
3 means; and

4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said housing is  
6 pivoted to envelop said needle.

31. Safety apparatus of claim 24, wherein said base comprises at least one pair of arms for embracing said body to thereby firmly secure said base to said body of said intravenous device.

1 32. Safety apparatus of claim 24, wherein said base comprises a tubular  
2 portion that slidably fits over an end portion of said body of said  
3 intravenous device.

1 33. Safety apparatus of claim 32, wherein said base comprises a pair of  
2 arms extending from the end of said base remote from said tubular portion,  
3 said pair of arms snappingly fitted over an other portion of said body after  
4 said tubular portion is fully mated to said end portion of said body of said  
5 intravenous device.

1 34. Safety apparatus to be used with an intravenous infusion device to  
2 prevent a contaminated needle of said infusion device from being exposed  
3 to the environment, comprising:

4 a base adapted to be matingly fitted to the body of said infusion  
5 device whereto said needle is attached, said base being configured to  
6 have an interior circumference surface that comes into intimate contact  
7 with a substantial portion of the outer circumference surface of said body  
8 when said base is fitted to said body;

9 a housing hingedly attached to said base, said housing being  
10 pivotable to a position in substantial alignment along the longitudinal axis  
11 of said base for enveloping said needle; and

12 locking means integrated to said housing for fixedly retaining said  
13 needle within said housing once said needle is enveloped by said housing.

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1 35. Safety apparatus of claim 34, wherein said base having at least one  
2 pair of arms that firmly embraces a portion of said body when said base is  
3 fitted to said body.

36. Safety apparatus of claim 34, wherein said locking means comprises a hook that retains said needle within said housing once said housing is pivoted substantially to said alignment position.

37. Safety apparatus of claim 34, wherein said base comprises a tubular portion that slidably fits over an end portion of said body of said infusion device.

38. Safety apparatus of claim 34, wherein said interior circumference surface of said base is coated with an adhesive means for bonding said base to said body of said device when said base is fitted to said body.

39. An intravenous device, comprising:  
a body having one end from which a needle extends and an other end to which a tubing is connected; and  
a housing hingedly attached to said one end of said body, said housing being pivotable to a position in substantial alignment along the longitudinal axis of said body so as to envelop said needle.

1 40. Intravenous device of claim 39, further comprising:  
2 locking means integrated to said housing for fixedly retaining said needle  
3 within said housing once said needle is enveloped by said housing.

1 41. Intravenous device of claim 40, wherein said locking means comprises  
2 a hook that snaps over and retains said needle within said housing when said  
3 housing is pivoted substantially to said alignment position.

1 42. Intravenous device of claim 40, wherein said locking means comprises  
2 at least one pair of fingers coacting to prevent said needle from being removed  
3 from said housing once said housing is pivoted to envelop said needle.

1 43. Intravenous device of claim 40, wherein said one end of said body  
2 includes at least one locking means and said housing includes at least an other  
3 locking means; and

4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said body when said housing is pivoted  
6 to envelop said needle.

1 44. Safety intravenous infusion assembly to prevent a contaminated needle  
2 of said infusion device from being exposed to the environment, comprising:

3 a body of said infusion device having an end where to said needle is  
4 attached;

5 a housing flexibly attached to said body, said housing being pivotable to  
6 a position in substantial alignment along the longitudinal axis of said body for  
7 enveloping said needle.

1 45. Safety intravenous infusion assembly of claim 44, further comprising:  
2 locking means integrated to said housing for fixedly retaining said needle  
3 within said housing once said needle is enveloped by said housing.

1 46. Safety intravenous infusion assembly of claim 45, wherein said locking  
2 means comprises a hook that retains said needle within said housing once said  
3 housing is pivoted substantially to said alignment position.

47. Safety intravenous infusion assembly of claim 44, further comprising:  
2 first locking means integrated to said end of said body; and  
3 second locking means integrated to said housing;  
4 wherein said first and second locking means coact with each other to  
5 fixedly hold said housing relative to said body when said housing is pivoted to  
6 said alignment position.

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